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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/547,673

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Atsushi Tomita

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MCDERMOTT WILL & EMERY LLP
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

EXAMINER

PRIETO, BEATRIZ

ART UNIT

PAPER NUMBER

2142

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/547,673

Applicant(s)

TOMITA, ATSUSHI

Examiner

Prieto Beatriz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11, 12, 15, 16 and 19-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25, 26 and 29 is/are allowed.
- 6) ☒ Claim(s) 11-12, 15-16, 19, 21, 23-24, 27-28 and 30 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This communication is in response to request for reconsideration filed 6/20/06, claims 11-12, 15-16, 19 and 21-30 have been examined.
2. Applicant's arguments (p. of remarks (p. 2) with respect to the interpretation of the claimed that claimed (15) clause "deciding a time period for which the apparatus management data is valid", has been considered, and found persuasive, as will be interpreted as a time period.

Claim Objection

3. Claim 15 are objected to due noted minor informality: on page 3, and taking in a packet form the communication network addressed to itself..., and further on page 4, the claim further recites, ...management device on condition that current data and/or time form said clock is past expiration date and/or time. Correction is required.
4. Claims 25-26 and 29 are in condition for allowance.
5. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejection under 103

6. Quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.
7. Claims 16, 19, 21, 23-24 rejected under 35 U.S.C. 103(a) as being unpatentable over GRANDE et. al. US 4,399,531 (referred to as GRANDE hereafter) in view of RFC: TCP Selective Acknowledgment Options, Mathis, M., et. al., Oct. 1996 (referred to as MATHIS hereafter)

Regarding claim 16, Grande teaches the steps of:

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receiving a message (202) transmitted from a receiving unit via a digital data communication network ('531 column 3, lines 54-58), the message including transmission date and/or time information ('531 column 4, lines 31-34, 39-41, 45-47, Time indicator field (33) of Fig. 3);

an internal clock providing current date and/or time (531' column 4, lines 36-38);

storing threshold date and/or time information deciding a time period for which the received message is valid (531' column 4, lines 34-37, 45-47);

determining the validity of the message, where the message is denoted "valid" when the current date and/or time obtained from said clock is not past an expiration date and/or time obtained from the time information in the received message and denoted "invalid" when the current date and/or time obtained from said clock is past an expiration date and/or time obtained from the time information in the received message (column 4, lines 34-49, column 1, lines 57-61); and

transferring the received message addressed to a terminal apparatus (531 column 5, lines 16-23) when the message is valid (531' column 8 line 51-column 9, line 11), the message comprising a command message (531' column 4, lines 63-66); Grande teaches acknowledging "transmitting a notice" a message by the receiving node when the message was incorrectly received by transmitting a NACK symbol which will result in a retransmission of the message by the transmitting node (531' column 1, lines 51-53, column 4, lines 7-17); determining if errors have corrupted the message, where if the error code proves that there was a transmission error, then a negative acknowledgment (NACK) "notice" is returned to the transmission node and a retransmission is automatically requested (531' column 5, lines 32-49), thus although Grande teaches transmitting a "notice" which indicates that the message is invalid to the sending unit when the message is invalid, and determining the validity of the message, and determining where the message is denoted "valid" when the current date and/or time obtained from said clock is not past an expiration date and/or time obtained from the time information in the received message and denoted "invalid" when the current date and/or time obtained from said clock is past an expiration date and/or time obtained from the time information in the received message, this determination is not used to transmit the notice.

Mathis discloses a selective acknowledgment option with enables the receiving entity a selective acknowledgment enable the data receive to inform the sender about all the segments that have arrived successfully so the sender need to retransmit only segments that has lost (p. 2), this option is used to convey extended acknowledgment information i.e. "notice" from the receiver to the sender (p. 3); this option is advisory, in that, while it notifies the data the receiver has received the indicated segments, the data receiver is permitted to later discard data which have been reported in a SACK option (p. 4); the

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receiver should send an ACK for every valid segment that arrives containing new data, and each of the duplicate ACKs should bear a SACK option (p. 5); for a receiver that is also using the timestamp option, the SACK option has room to include three SACK blocks (p. 8); Mathis suggests using the SACK option for reporting old data so as long as all is actually held by the receiver. Since the data receiver may later discard data reported in a SACK option, the sender must not discard data before it is acknowledged. (p. 10)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the teachings of Mathis because in doing so the discarded aged or old messages discarded by Grande can be resent within one window of data and with the need retransmitting segments that already been successfully received, enabling the system to resend selective missing and aged data, as suggested by Mathis.

Claims 17 & 18 (Cancelled)

Regarding claim 19, this apparatus claim comprises similar features and/or limitation as those discussed on claim 16, the receiving, providing, storing, steps and further the analyzing and controlling steps of claim 16, are here performed by a receiving unit, clock, threshold date and/or time storing unit, decision unit, and control unit, respectively, the management unit in claim 16, is here denoted management device, the message "mail" in claim 16, is here denoted a command;

a receiving node (8) for receiving a message (202) transmitted from a sending unit (1-6) via a digital data communication network ('531 column 3, lines 54-58), the message including transmission date and/or time information ('531 column 4, lines 31-34, 39-41, 45-47, Time indicator field (33) of Fig. 3);

each node (1-6) has an internal clock providing current date and/or time (531' column 4, lines 36-38);

unit (13) for storing threshold date and/or time information deciding a time period for which the received message is valid (531' column 4, lines 34-37, 45-47);

unit (13) for determining the validity of the message, where the message when the current date and/or time obtained from said clock is not past an expiration date and/or time obtained from the time information in the received message, i.e. denoted "valid" and when the current date and/or time obtained from said clock is past an expiration date and/or time obtained from the time information in the received message, i.e. denoted "invalid" (column 4, lines 34-49, column 1, lines 57-61); and

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unit (19) transferring the received message addressed to a terminal apparatus (531 column 5, lines 16-23) when the message is valid (531' column 8 line 51-column 9, line 11), the message comprising a command message, so that the command is perform (531' column 4, lines 63-66); although Grande teaches transmitting a "notice" to the sending node "management device" which indicates that the message is invalid to the sending unit when the message is invalid, this valid is based on whether error codes were found in the message (column 1, lines 51-53 and column 4, lines 7-17), however does not teach sending a notice when the current date and/or time obtained from the clock is past the expiration date and/or time.

Mathis discloses a selective acknowledgment option with enables the receiving entity a selective acknowledgment enable the data receive to inform the sender about all the segments that have arrived successfully so the sender need to retransmit only segments that has lost (p. 2), this option is used to convey extended acknowledgment information i.e. "notice" from the receiver to the sender (p. 3); this option is advisory, in that, while it notifies the data the receiver has received the indicated segments, the data receiver is permitted to later discard data which have been reported in a SACK option (p. 4); the receiver should send an ACK for ever valid segment that arrives containing new data, and each of the duplicate ACKs should bear a SACK option (p. 5); for a receiver that is also using the timestamp option, the SACK option has room to include three SACK blocks (p. 8); Mathis suggest using the SACK option for reporting old data so as long as all is actually held by the receiver. Since the data receiver may later discard data reported in a SACK option, the sender must not discard data before it is acknowledged. (p. 10)

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to include the teachings of Mathis because in doing so the discarded aged or old messages discarded by Grande can be acknowledged within one window of data and without the need retransmitting segments that already been successfully receive, enabling the system acknowledge selectively missing and aged data, as suggested by Mathis.

Claim 20 (Cancelled)

Regarding claim 21, message/commands determined invalid and aged are discarded, thus not used to control the management device, as discussed above.

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Regarding claim 23, this apparatus claim comprises similar features and/or limitation as those discussed on claim 16, the receiving, providing, storing, steps and further the analyzing and controlling steps of claim 16, are here performed by a receiving unit, clock, threshold date and/or time storing unit, decision unit, and control unit, respectively, the management unit in claim 16, is here denoted center device, the message "mail" in claim 16, is here denoted a command, same rationale of rejection is applicable.

Regarding claim 24, Grande teaches a transmitting node (center device) comprising a unit (7) for transmitting transmission date and/or date and/or time and command data in a packet form (202);

a receiving node (terminal device) configured to relaying the command data between the center device and the I/O terminal apparatus (column 2, lines 52-66), terminal device comprising: a unit (7) for receiving the transmission date and/or time and the command data from the center device (column 1, lines 38-46column 4, lines 31-47), a unit for holding date and/or time information provided by a clock providing current date and/or time used for determining which message is valid (column 4, lines 34-47), a unit (19) for transmitting the command data to the apparatus on condition that the current date and/or time obtained from the clock is not past expiration date and/or time obtained from the transmission date and/or time and the threshold date and/or time information (column 4, lines 34-49 and column 1, lines 57-61); and transmitting the receive command to the addressed I/O terminals (column 5, lines 16-23), when the message is valid (column 4, lines 63-66); and the I/O terminal apparatus (Fig. 2) comprising a interface unit for receiving via links from the receiving node (column 3, lines 45-51) the message comprising a command (column 4, lines 63-66), and corresponding to the command data (column 1, lines 57-66, column 2, lines 55-56); transmitting a notice, when the current date and/or time obtained from the clock is past the expiration date and/or time.

Mathis discloses a selective acknowledgment option with enables the receiving entity a selective acknowledgment enable the data receive to inform the sender about all the segments that have arrived successfully so the sender need to retransmit only segments that has lost (p. 2), this option is used to convey extended acknowledgment information i.e. "notice" from the receiver to the sender (p. 3); this option is advisory, in that, while it notifies the data the receiver has received the indicated segments, the data receiver is permitted to later discard data which have been reported in a SACK option (p. 4); the receiver should send an ACK for ever valid segment that arrives containing new data, and each of the duplicate ACKs should bear a SACK option (p. 5); for a receiver that is also using the timestamp option, the SACK option has room to include three SACK blocks (p. 8); Mathis suggest using the SACK option for reporting old data so as long as all is actually held by the receiver. Since the data receiver may later

discard data reported in a SACK option, the sender must not discard data before it is acknowledged. (p. 10)

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to include the teachings of Mathis because in doing so the discarded aged or old messages discarded by Grande can be acknowledged within one window of data and without the need retransmitting segments that already been successfully receive, enabling the system acknowledge selectively missing and aged data, as suggested by Mathis.

8. Claims 11-12, 15, 27-28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tarr, et. el. (Tarr) U.S. Patent No. 5,184,179 in view of Cawley (US 5,361,334)

Regarding claims 11-12, 15, 27-28 and 30 Tarr teaches substantial features of the invention as claimed, teaching

a management system (Figs. 3-4) that manages apparatuses (52 of Fig. 3) connected to a plurality of "apparatus management" devices, i.e. processor (16 of Fig. 1 or 60 of Fig. 3), by transmitting and receiving a information including "apparatus management" data between a "centralized management" device (103 of Fig. 4) and the apparatus management devices via a communication network, (Tarr: receiving/transmitting by control computer (16) see col 3/lines 54-58 and col 9/lines 58-col 10/line 4, transmitting over a local area network to central station see col 5/lines 8-13, data transfer in discrete bytes, i.e. packets see col 3/lines 59-60) wherein said centralized management system comprises:

communication network for sending out to the communication network a packet being addresses to a specified apparatus management device and taking in a packet from the communication network addressed to itself (Tarr: sending out packets addressed to processor see col 3/lines 54-56 and 7/lines 20-26, sending to respective processor see col 9/lines 31-21, and taking in see col 7/lines 28-31, centralized station having a modem, i.e. for taking in see col 5/lines 40-43 and sending out see col 6/lines 27-38), wherein said apparatus management devices each comprises:

first communication means (20) for transmitting and receiving the apparatus management data to and from the apparatus (Tarr: receive/transmit to/from copier see col 7/lines 13-20 including command data sent from the centralized management device to the apparatus connected to a respective apparatus management device, column 6, lines 27-39 and column 8, lines 7-12);

second communication means (42) for sending out a packet addressed to said centralized management device through the communication network, and taking in a packet from the communication

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network addressed to itself (Tarr: sending out by transceiver 42 of processor (16) to central station see col 7/lines 28-38, taking in data addressed to itself, i.e. answering see col 5/lines 40-43);

clock means (30) for providing current time (Tarr: col 6/lines 43-46); and

permitting transmission of the apparatus management data to the apparatus connected to said apparatus management device on condition based on the current time obtained from an internal clock ("clock means for providing current time") (col 6/lines 39-68); although Tarr permitting transmission of the apparatus management data to the apparatus connected to said apparatus management device based on said provided current time;

Tarr does not explicitly teach where said packets include expiration information (e.g. date and/or time) upon which validity of data is determined;

Cawley teaches a method for detecting and disposing of corrupted "ghost" packets (column 9, lines 35-55) by time-stamping each packet on transmission from a node with an expiry time having a value longer than the maximum possible transit time, where upon receipt of the packet by a node, the timestamp is compared with the current time is greater than or equal to the expiry time the packet is destroyed (column 9, line 67-column 10, line 15).

It would have been obvious to one ordinary skilled in the art at the time the invention was to combine the teachings of Tarr's for transmitting status and billing information to include Cawley teachings for discarding corrupted data. The teaching of Cawley would enable or disable the transmission of data based on its validity in the Tarr system including commands sent from the billing computer to the computer control, discussed above. One would be motivated to enable Tarr's system to destroy packets having information at the head of a packet is corrupted, particularly where node failure occurs on nodes between the sending and destination nodes, further enhanced with retry mechanisms for obtaining non-corrupted packets by retrying at least once and preferably more times which may be done at a microcode or a software level and/or take whatever action is appropriate for reporting that a node has died and trigger recovery actions such as restarting tasks from their latest checkpoint, as suggested by Cawley.

Response to Arguments

9. Applicant argues (p. 4 of remarks) that the Tarr reference does not ever realistically encounter a situation where the signal sent to the billing computer indicating the end of the predetermined time period is invalid.

In response to the above-mentioned argument, Applicant's interpretation of the applied reference has been noted. However, determining whether a data packet is valid or is not valid, seems to encompass, comparing the date and time included in the data packet with a predetermined expiration date and time, if determined that the date and time included in the packet is not past an expiration date and time, the data packet is denoted "valid" and when the date and time included in the packet is past an expiration date and time, the data packet is denoted "invalid" "not valid" (specs p. 21-23). Thus, validity seems to be based on the age or timeliness of the received packet.

In the Tarr reference the transmission of data whether it is the signal applicant makes reference to, transmission of the count value containing status data from the copiers or the transmission of commands from the billing computer to the control computer are all transmitted over a local area network or telephone line (see column 5, lines 8-10); Tarr discloses that in event of a citywide back-out, all photocopiers calling the billing computer at the same time may cause traffic jams on the telephone network, thus clock synchronization is implemented (see column 8, lines 66-column 9, line 22).

Network latency or transmission delays seem to be a realistic encounter situation where the signal sent to the billing computer indicating the end of the predetermined time period is invalid because network delays caused the date and time included in the packet to past an expiration date and time. Network latency or transmission delays seem to be a realistic encounter situation when the transmission of the count value containing status data from the copiers is delayed due to an increase in traffic over the telephone network, causing the date and time included in the packet to past an expiration date and time, and thus be determined invalid.

10. Applicant argues (p. 3 of remarks) that the Tarr reference does not teach a packet sent from the centralized management device to the apparatus connected to a respective apparatus management device.

In response to the above-mentioned argument, applicant's interpretation of the applied prior art has been reviewed. Tarr teaches sending a packet from the centralized management device to the apparatus connected to a respective apparatus management device. Specifically, where the billing center computer 38 may send a signal to monitoring system 10 to retrieve the paper count

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information, if after a predetermined time interval no signal has occurred, billing computer 38 through modem 14 will poll photocopier monitoring system 10 to ascertain the status of the copier being monitored by photocopier monitoring system 10 and retrieve the information stored in memory 28 (see column 6, lines 27-39); the maintenance status of the copier may be ascertained by the billing or other computer located at the central station, by sending a status inquiry signal to monitoring CPU 24 causing controller 16 to output the information stored in memory 29 (see column 8, lines 7-12 and Fig. 1).

11. Applicant argues that the Nobushisa reference fails to disclose whether or not the received data is valid.

In response to the above-mentioned argument, Applicant's interpretation of the applied Nobushisa has been considered. Applicant's arguments (p. of remarks (p. 2) with respect to the interpretation of the claimed that claimed (15) clause "deciding a time period for which the apparatus management data is valid", has been considered, and found persuasive, as will be interpreted as a time period.

Regarding the above argument, that Nobushisa fails to disclose whether or not the received data is valid, has been considered. According to the invention's disclosure, determining whether the received data is valid, relates to section [2-2-5-1 and Fig. 12] describing a process which when the data transmitted from the center includes expiration date and time information. In this case, it is unnecessary for the data terminal 1 to hold threshold value information representing the period for which the command is valid, but the data terminal 1 obtains the time from the clock IC 17 and compares it with the expiration date and time information. When the setting change command or the operation command is included in the mail received from the center, first, the date and time is read from the clock IC 17 (step S801). Then, *the date and time read at step 5801 and the expiration date and time added to the command are compared (step S803). When the date and time is not past the expiration date and time (YES of step S803), the command and its parameters are transmitted to the CPU 41 via the serial I/F 12 and the serial I/F 42 (step S811).* Consequently, the processing corresponding to the command is performed at the copying machine 4 at step S43 of Fig. 5. *When the date and time is past the expiration date and time (NO of step 5803), a mail saying that is transmitted to the center at step 5821. In this case, the command received from the center is not executed.* [2-2-5-2] Remote Command Processing shown on Fig. 13 is performed when the data transmitted from the center does not include the expiration date and time information but includes the transmission date and time. In this case, it is necessary for the data terminal 1 to hold the threshold information representing the period for which the command is valid. The *threshold value information is*

added to the transmission time of the center, and the result of the addition is compared with the time obtained from the clock IC 17. When the setting change command or the operation command is included in the mail received from the center, first, the transmission date and time of the mail is read from the date field of the header section of the mail (step S901). Then, at step S903, a threshold value time for deciding whether to execute the command or not based on the time that elapsed from the transmission of the command by the center to the reception of the command by the data terminal 1 is read from the non-volatile memory 16. At the next step S905, the threshold time read at step S903 is added to the transmission date and time of the mail to calculate the expiration date and time of the command. Lastly, the date and time is read from the clock IC 17 (step S907), and the read date and time and the expiration date and time calculated at step S905 are compared (step S909). When the date and time is not past the expiration date and time (YES of step S909), the command and its parameters are transmitted to the CPU 41 via the serial I/F 12 and the serial I/F 42 (step S911). Consequently, the processing corresponding to the command is performed at the copying machine 4 at step S43 of Fig. 5. When the date and time is past the expiration date and time (NO of step S909), a mail saying that is transmitted to the center at step S921. In this case, the command received from the center is not executed. The processes of Figs. 12 and 13 may be replaced with each other according to whether the command transmitted from the center includes the expiration date and time information or not (specs p. 21-23).

Thus, according to instant invention [AS BEST UNDERSTOOD] determining whether or not received data is valid is done by comparing a date and time added to a command with an expiration date and time, specifically, *when the date and time is not past the expiration date and time*, the command is processed, however *when the date and time is past the expiration date and time*, a notice mail is transmitted to the center and the command received from the center is not executed.

Hence, determining whether a data packet is valid or is not valid, seems to encompass, comparing the date and time included in the data packet with a predetermined an expiration date and time, if determined that the date and time included in the packet is not past an expiration date and time, the data packet is denoted "valid" and when the date and time included in the packet is past an expiration date and time, the data packet is denoted "invalid" "not valid". Thus, validity seems to be based on the age or timeliness of the received packet.

Nobuhisa teaches comparing the date and time included in a data packet with a predetermined date and time, including determining that the date and time included in the packet is not past the predetermined date and time and determining that the date and time included in the packet has past the predetermined date and time.

Hence, because Nobuhisa teaches comparing the date and time included in a data packet with a predetermined date and time, including determining that the date and time included in the packet is not past the predetermined date, Nobuhisa teaches determining what is denoted by the instant invention as “valid” data, and because Nobuhisa teaches determining that the date and time included in the packet has past the predetermined date and time, Nobuhisa teaches determining what is denoted by instant invention as “invalid” data[0019-0021]. The principle of operation of including a date and time in a packet, transmitting it by a first device, receiving on another device and comparing the date and time in the packet with another date and time, where if the date and time in the packet exceeds a predetermined second date and time, a first action is performed in the disclosure of Nobuhisa.

12. Applicant argues that the Nobuhisa reference fails to disclose transferring a notice if the data is invalid.

In response to the above-mentioned argument, the principle of providing a “notice” to the sender of detected invalid data is known in the art as negative acknowledgment. Specifically, digital information in the form of data and control information blocks is transmitted between the remotes with the blocks transmitted twice on each channel of the communications link. The destination remote tests the block validity on a channel and, if validated, responds with an acknowledgement signal (ACK) and, if invalid, responds with an acknowledgement or non-acknowledgement signal (NAK) depending upon whether the data blocks tests on the channel are found valid or invalid. A non-acknowledgement from the destination remote re-triggers the transmission of the blocks from the source remote. The system provides high overall operating efficiency since the remotes will maintain a system-like integrity on each side of a severed communication link and the redundant block transmission with alternate line checking provides very high information transfer reliability (see also pertinent prior art).

13. Applicant’s arguments have been fully considered but not rendered persuasive.

Citation of Pertinent Art:

14. The following prior art made of record and considered pertinent to applicant’s disclosure. Copies of Non-Patent Literature documents cited will be provided as set forth in MPEP§ 707.05(a):

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US 7,080,127

Hickman; Paul L., et. al. teaches a packet including a time stamp 678 to allow a "time out" for the data packet; as each node in the system receives the data packet 672, it first determines whether it is the destination of that packet by examining the TCP/IP packet 674 for the destination address. That node then determines whether it has already received that packet. If it has received the packet, that packet is ignored, i.e. it is "discarded." If the receiving node had not received that TCP/IP packet 674 before and if it is for that node, the transmission data 676 and the time out data 678 can be "discarded" and the TCP/IP packet 674 is used. If, however, it is determined that the TCP/IP packet 674 is not for the receiving node, the time out data 678 is used to determine the age of the packet. This can be accomplished by comparing the time stamp 678 to real time data available over the network, on the computer, or from another source. For example, if the packet is older than a predetermined period, such as a fraction of a second (e.g. 1/4 or 1/2 second), it may be considered to be "timed out" and it is then "discarded" by the receiving node. If the received data packet is not for that node, and is not timed out, the transmission data 676 is reviewed to see if the node has already repeated that packet. If so, the packet is again discarded. However, if the received packet is not for that node, the packet has not timed out, and that node has not repeated that packet, the node will add its address to the transmission data 676 and retransmit the packet for reception by other nodes on the network.

US 5,603,059

Churchill et. al. discloses a software architecture system having a virtual I/O channel including multi-layered communication interface in between virtual stations and physical modules. A negative acknowledgment, referred to herein as NAK, informs the sender that there was a problem receiving the packet, and that the sender should retransmit the packet. A positive acknowledgment, referred to herein as ACK, informs the sender that the packet was properly received, and that the sender may now send additional packets to the receiver.

US 4,304,001

Cope teaches where if the received information is invalid, the receiving unit then selects and tests the validity of the information on the other channel. If the information is valid, an acknowledgement is sent to the transmitting unit, and if the information on both channels is invalid, a non-acknowledgement is sent to request retransmission of the invalidly received information, this increases the system high operating reliability.

Art Unit: 2142

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Thursday from 5:30 to 2:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Andrew T. Caldwell can be reached at (571) 272-3868. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see <http://pair-direct.uspto.gov> or the Electronic Business Center at 866-217-9197 (toll-free).

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(571) 273-8300 (New Central Fax No.)

Or Telephone:

(571) 272-2100 for TC 2100 Customer Service Office.

B. Prieto
Primary Examiner
TC 2100
September 18, 2006

Beatriz Prieto
BEATRIZ PRIETO
PRIMARY EXAMINER